

August 10, 1964

④ File.

DIGITAL READOUT COUNTERS

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The Digital Readout Counters manufactured by [] are used to count pulses from a measuring engine reading head. Two things are done with the count:

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- A. The count is converted to a decimal digit reading and displayed to the operator on Nixie tube counters.
- B. The count is stored in a synchronizer buffer and transmitted to a computer, via dataphone, as binary pulses in a standardized coded sequence.

The counter usually consists of four chassis:

- A. A control panel
- B. A Synchronizer
- C. An x-axis counter
- D. A y-axis counter

Additional counter chassis may be added to add axes, and a 4-axis counter will have two additional chassis.

There are currently on order three 2-axis systems and one 4-axis system and spares.

The 2-axis counters are in work and delivery of the first one will be on or about August 22 as indicated in my previous report. All the circuit boards are complete for all three systems. Wiring of counters and control panel is complete for the first unit and checkout will start today. Wiring of the first synchronizer started today and will take about a week. The circuit boards on the spares contract will be delivered concurrently with the first 2-axis system.

The information which [] required by August 1 was received verbally and did not hold up the 2-axis systems. [] indicated the 2-axis systems would be used with the [] reading heads so [] will include the lamp excitation power and the 5 Volt power from connectors on the synchronizer. The 4-axis counter

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Declass Review by NGA.

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will be used with the [] reading head and that is a different story.

The pulse data which [] received from [] did not correspond to the data which [] received from [] who is Chief Engineer at []. Further, [] that the pulse measurements he has made on the [] unit in-house are different from anything quoted. [] suspects that the [] head does not include the pulse shaping circuitry to make it operate like a Class C amplifier with a constant pulse output. It appears that the head output pulse may be varying with head pickup conditions like a Class A amplifier.

[] feels that making a counter, which counts pulses from a signal generator, count pulses from a transducer should be very simple and straightforward. He would expect the problems to arise when the counter is hooked to the computer. Generally, transmitting to and receiving from a computer is a much more difficult interface.

[] will have to get clarification of the pulse shape from []. The pulse shape information will be needed by [] no later than September 15, 1964, in order to make an October 1 delivery.

The cable lengths for the 4-axis system are to be specified by []. The cable length information is needed by [] by September 1, 1964, in order to fit into their manufacturing schedule. [] advised [] to make the cables 15 ft long if final information was not available in time.

Since all the counters were contracted for at about the same time, the price was reduced about 5% from the original quote.

Except for the problems generated by the [] pulse, [] has been well satisfied with the planning by the customer. He says that it is unusual that they are brought in on a job early enough to have adequate delivery time. I would consider that a compliment to []'s foresight.

I strongly recommend that [] and possibly [] as soon as they have checked out the [] unit in-house, preferably sometime around August 22. It is important that they discuss the pulse

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matching interface solution with

[REDACTED]

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[REDACTED] indicated that [REDACTED] was intelligent and knowledgeable. He understood the circuitry and asked intelligent questions. A second visit would probably be valuable after [REDACTED] has worked on the actual unit.

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[REDACTED]

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